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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,314

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EXAMINER

HUSSAIN, FARRUKH

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,314	Applicant(s) LU ET AL.	
	Examiner FARRUKH HUSSAIN	Art Unit 2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/09/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application has been examined. Claims 1-14 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis (US 2004/0004955 A1), in view of Jain (US 2002/0116669 A1).

3. With respect to the claim 1, Lewis reference teaches A method for binding a work label switching path (LSP) with a protection LSP, comprising:
A Path Switching Label Switching Router (PSL) transmitting a first message which comprises binding information to a Path Merging Label Switching Router (PML) to request for creating the protection LSP of the work LSP (See paragraph 0007, lines 1-9 sending a first LSP setup request message comprising a first bi-directional indicator from the first routing device to the second routing device and See paragraph 0067, lines 1-9 Security measures may include authorization codes);
and returning a second message which comprises the binding information (See paragraph 0007, lines 9-17 sending a second LSP setup request message from

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the second routing device to the first routing device in response to the first bi-direction indicator);

upon receiving the second message, the PSL router binding the work LSP with the protection LSP according to the binding information, and transmitting a notification message which comprises the binding information to the PML switched router (See paragraph 0044, lines 8-14 transit router 108 returns an error notification to the LER);

Lewis reference fails to explicitly teach the PML router assigning a label for the protection LSP based on the first message, the PML router binding the work LSP with the protection LSP according to the binding information in the notification message. However, Jain reference teaches teach the PML router assigning a label for the protection LSP based on the first message (See paragraph 0083, lines 1-8 the protection LSPs allow data to be re-routed), the PML router binding the work LSP with the protection LSP according to the binding information in the notification message (See paragraph 0007, lines 1-13 A fault notification is required for each LSP). Therefore, it would have obvious to a person of ordinary skill in the art at the time of invention was made to have been combined the teachings of Jain to utilize the protection LSP feature within the transmitting a first message which comprises binding information to a Path Merging Label Switching Router taught by Lewis. The motivation for this would have been to avoid failed network nodes as well as failed network links (See paragraph 0083, lines 1-8 the protection LSPs allow data to be re-routed).

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4. With respect to the claim 2, Jain reference teaches The method according to Claim 1, further comprising: before creating the work LSP, designating the PML router and a protection mode of the work LSPs at the PSL switched router; or, after creating the work LSP, designating the PML router and the protection mode of the work LSPs at the PSL switched router (See paragraph 0085, lines 1-9 one or more protection LSPs is defined and See paragraph 0013, lines 1-7 the particular router is using to send data, e.g., those resources being used by label-switched paths (LSPs) set up by that router).

5. With respect to the claim 3, Jain reference teaches The method according to Claim 1, if the protection mode for the work LSPs is 1+1 mode, the binding information comprises the work LSP identifier, LSP type, and the protection mode (See paragraph 0106, lines 1-15 the protection provided may be 1:1, 1:n, 1+1, ring, or fast re-route and See paragraph 0021, lines 14-20 a label-switched path that uses a resource identified by the corresponding point of failure); if the protection mode for the work LSPs is 1:1, the binding information comprises the work LSP identifier, LSP type, the protection mode and selection mode of the return LSP in the 1:1 protection mode (See paragraph 0106, lines 1-15 the protection provided may be 1:1, 1:n, 1+1, ring, or fast re-route and See paragraph 0021, lines 14-20 a label-switched path that uses a resource identified by the corresponding point of failure).

6. With respect to the claim 4, Jain reference teaches The method according to Claim 3, further comprising, after the PML router receives the notification message, if it is determined that the protection is in the 1:1 mode and

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it is chosen to create the return LSP dynamically via signaling (See paragraph 0106, lines 1-15 the protection provided may be 1:1, 1:n, 1+1₁ ring, or fast re-route and See paragraph 0050, lines 1-6 signal integrity verification):

the PML router transmitting to the PSL router a third message of requesting for creating the return LSP, with the binding information included in the third message (See paragraph 0013, lines 1-7 the particular router is using to send data₁ e.g., those resources being used by label-switched paths (LSPs) set up by that router and See paragraph 0016, lines 1-8 The label used for a fault notification may be referred to as a "fault information label" (FIL).);

the PSL router assigning a label for the return LSP according to the third message, and returning a fourth message which comprises the binding information (See paragraph 0013, lines 1-7 the particular router is using to send data₁ e.g., those resources being used by label-switched paths (LSPs) set up by that router and See paragraph 0016, lines 1-8 The label used for a fault notification may be referred to as a "fault information label" (FIL).);

the PML router binding the work LSP and the return LSP based on the binding information of the fourth message, and transmitting to the PSL router a notification message which comprises the binding information (See paragraph 0013, lines 1-7 the particular router is using to send data₁ e.g., those resources being used by label-switched paths (LSPs) set up by that router and See paragraph 0016, lines 1-8 The notification may include the SRLG that corresponds to the particular failure that occurred.);

the PSL router binding the work LSP and the return LSP based on the binding

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information of the notification message (See paragraph 0013, lines 1-7 the particular router is using to send data, e.g., those resources being used by label-switched paths (LSPs) set up by that router and See paragraph 0016, lines 1-8 The notification may include the SRLG that corresponds to the particular failure that occurred.).

7. With respect to the claim 5, Lewis reference teaches The method according to Claim 4, wherein, if Resource Reservation Protocol (RSVP) is used to create the LSP, the first message and the third message are path messages in the RSVP, and the second message and the fourth message are Resv messages in the RSVP, and the notification message is Reservation Configuration (ResvConf) message in the RSVP (See paragraph 0008, lines 1-9 the first and second LSP setup request messages are first and second RSVP PATH messages).

8. With respect to the claim 6, Lewis reference teaches The method according to Claim 5, further comprising: extending a binding object in the RSVP, and extending the Path message, Resv message and ResvConf message to comprise information of the binding object to implement the binding of the work LSP and the protection LSP (See paragraph 0008, lines 1-9 the first and second LSP setup request messages are first and second RSVP PATH messages).

9. With respect to the claim 7, Lewis reference teaches The method according to Claim 4, wherein, if label distribution protocol (LDP) or constraint route-label distribution protocol (CR-LDP) is used to create the LSP, the first message and the third message are the Label Request messages of the LDP or

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CR-LDP, and the second message and the fourth message are the Label mapping messages of the LDP or the CR-LDP, and the notification message is a notification message in the LDP or the CR-LDP (See paragraph 0065, lines 1-12 LDP₁ for example, may be used).

10. With respect to the claim 8, Jain reference teaches The method according to Claim 7, further comprising: extending the binding Type Length Value (TLV) in the LDP or the CR-LDP, and adding the binding TLV to the Label Request message, Label mapping message and notification message to implement the binding of the work LSP and the protection LSP(See paragraph 0097, lines 1-24 a new type-length value (TLV) may be defined).

11. With respect to the claim 9, Jain reference teaches The method according to Claim 2, if the protection mode for the work LSPs is 1+1 mode, the binding information comprises the work LSP identifier, LSP type, and the protection mode (See paragraph 0106, lines 1-15 the protection provided may be 1:1, 1:n, 1+1₁ ring, or fast re-route and See paragraph 0021, lines 14-20 a label-switched path that uses a resource identified by the corresponding point of failure); if the protection mode for the work LSPs is 1:1, the binding information comprises the work LSP identifier, LSP type, the protection mode and selection mode of the return LSP in the 1:1 protection mode (See paragraph 0106, lines 1-15 the protection provided may be 1:1, 1:n, 1+1₁ ring, or fast re-route and See paragraph 0021, lines 14-20 a label-switched path that uses a resource identified by the corresponding point of failure).

12. With respect to the claim 10, Jain reference teaches The method according to Claim 9, after the PML router receives the notification message, if it is determined that the protection is in the 1:1 mode and it is chosen to create the return LSP dynamically via signaling, further comprising (See paragraph 0106, lines 1-15 the protection provided may be 1:1, 1:n, 1+1_s ring, or fast re-route and See paragraph 0050, lines 1-6 signal integrity verification):

the PML router transmitting to the PSL router a third message of requesting for creating the return LSP, with the binding information included in the third message (See paragraph 0013, lines 1-7 the particular router is using to send data_s e.g., those resources being used by label-switched paths (LSPs) set up by that router and See paragraph 0016, lines 1-8 The label used for a fault notification may be referred to as a "fault information label" (FIL).);

the PSL router assigning a label for the return LSP according to the third message, and returning a fourth message which comprises the binding information (See paragraph 0013, lines 1-7 the particular router is using to send data_s e.g., those resources being used by label-switched paths (LSPs) set up by that router and See paragraph 0016, lines 1-8 The label used for a fault notification may be referred to as a "fault information label" (FIL).);

the PML router binding the work LSP and the return LSP based on the binding information of the fourth message, and transmitting to the PSL router a notification message which comprises the binding information (See paragraph 0013, lines 1-7 the particular router is using to send data_s e.g., those resources being used by label-switched paths (LSPs) set up by that router and See

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paragraph 0016, lines 1-8 The notification may include the SRLG that corresponds to the particular failure that occurred.);

the PSL router binding the work LSP and the return LSP based on the binding information of the notification message (See paragraph 0013, lines 1-7 the particular router is using to send data, e.g., those resources being used by label-switched paths (LSPs) set up by that router and See paragraph 0016, lines 1-8 The notification may include the SRLG that corresponds to the particular failure that occurred.).

13. With respect to the claim 11, Lewis reference teaches The method according to Claim 10, wherein, if Resource Reservation Protocol (RSVP) is used to create the LSP, the first message and the third message are path messages in the RSVP, and the second message and the fourth message are Resv messages in the RSVP, and the notification message is Reservation Configuration (ResvConf) message in the RSVP (See paragraph 0008, lines 1-9 the first and second LSP setup request messages are first and second RSVP PATH messages).

14. With respect to the claim 12, Lewis reference teaches The method according to Claim 11, further comprising: extending a binding object in the RSVP, and extending the Path message, Resv message and ResvConf message to comprise information of the binding object to implement the binding of the work LSP and the protection LSP (See paragraph 0008, lines 1-9 the first and second LSP setup request messages are first and second RSVP PATH messages).

15. With respect to the claim 13, Lewis reference teaches The method according to Claim 10, wherein, if the LDP or the CR-LDP is used to create the LSP, the first message and the third message are the Label Request messages of the LDP or CR-LDP, and the second message and the fourth message are the Label mapping messages of the LDP or the CR-LDP, and the notification message is a notification message in the LDP or the CR- LDP (See paragraph 0065, lines 1-12 LDP₁ for example, may be used).

16. With respect to the claim 14, Jain reference teaches The method according to Claim 13, further comprising: extending the binding Type Length Value (TLV) in the LDP or the CR-LDP, and adding the binding TLV to the Label Request message, Label mapping message and notification message to implement the binding of the work LSP and the protection LSP (See paragraph 0097, lines 1-24 a new type-length value (TLV) may be defined).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2005/0198375 A1 by Hwang et al. discloses Distributed Multi-Protocol Label Switching Router And Managing Labels Therein.

US 2006/0268853 A1 by Guichard et al. discloses Methods And Apparatus For Distributing Label Information.

US 2004/0240442 A1 by Grimminger discloses Method And Device For Adapting label Switched Paths In Packet Networks.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARRUKH HUSSAIN whose telephone number is (571)270-5652. The examiner can normally be reached on Monday-Thursday, Alt. Friday, 7:30 A.M-5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/FH/
Examiner, Art Unit, 2444
03/27/2009

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444